January 1981

PRODUCTION

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Automaking Innovations May Alter Your Course, Too ... p. 89

Manufacturing PLANBOOK Supplement
Automation in Forming . . . p. 75

ROBOTS-Ready, Willing & Able . . . p. 89

PRODUCTION®

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It is the purpose of **PRODUCTION** to recognize and to fulfill the special needs of the managers and engineers who are responsible for improving manufacturing efficiency, costs and quality in production metalworking plants, and selected supplier industries.

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75 **Manufacturing PLANBOOK Supplement—Automation in Forming**
Total stamping systems are starting to take the limelight as mechanization moves nearer to full and integrated automation. New computer-controlled coil handling systems feature automatic adjustment, triggered by the appropriate part number

Automaking Innovations May Alter Your Course, Too
As the domestic auto industry shifts gears its new manufacturing facilities abound in state-of-the-art technological advancements. Many aim at improving quality while making the equipment more nearly foolproof. Examples from each domestic company are given

Will You Be Using 'Smart' Machines?
If we are to utilize our metalcutting machine tools to their utmost, some say we'll be depending on sensors that tell us directly what's going on during the cut. If that's true, there's still some development work to be done

Robots—Ready, Willing & Able
An unexpectedly large number of manufacturing people—6500—thronged to the ROBOTS V conference and show in Dearborn, MI, where several new entries made their debut and preparations for putting them to work were discussed thoroughly

Performance & Availability: The Tool Steel Challenge
Two new grades of CPM tool steels have been added by Crucible Specialty Metals Div., one for improved performance in high shock and wear conditions, the other as a way of avoiding the cobalt availability problem

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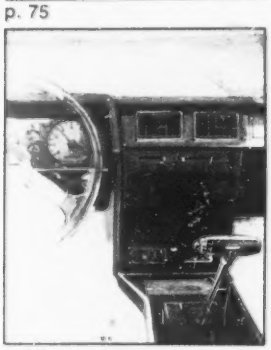
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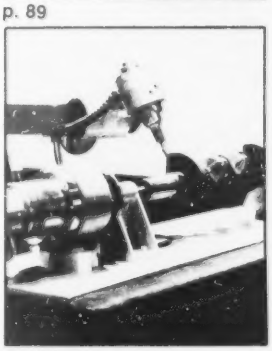
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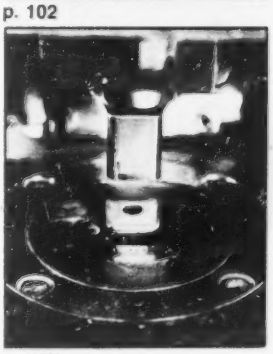
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Cover: As the automakers' future road unfolds, innovations for all of metalworking are coming. The illustrator is Mike Mikos

Next Month: What Materials Requirements Planning (MRP) Can Do for You; Ultraprecision Results from Wire EDM's Marriage with a Computer

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MANUFACTURING OUTLOOK

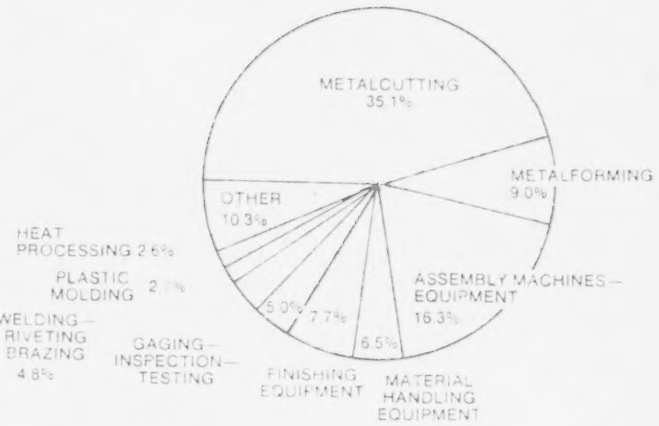
A distillation of fact and opinion based on regular contacts with leading economists and universities, and published data from The Federal Reserve, Department of Commerce, Council of Economic Advisors, The Conference Board and leading banking institutions.

Capital Spending Will Soften in 1981

Production metalworking industries* will spend about $11.0 billion this year for production machinery and equipment. This spending is at about the same dollar level as one year ago but translates into a decrease of 10 percent in real terms (1981 dollars). That's the projection based on the annual survey conducted by Bramson Publishing Company's Research Division in 12,000 plants which employ 50 or more persons. The survey was conducted in late July and August.

Spending intentions of respondents are less optimistic than one year ago with only 43.8% planning to increase their spending in 1981 (vs. 57.4% last year). Another 31.4% plan to spend the same amount as in 1980, 18.1% plan to cut back, and the remaining 6.6% were unable to answer the question. The indication is that many companies are in a "holding pattern" with respect to their machinery-equipment procurement programs.

HOW THE 1981 CAPITAL EQUIPMENT DOLLAR WILL BE SPENT



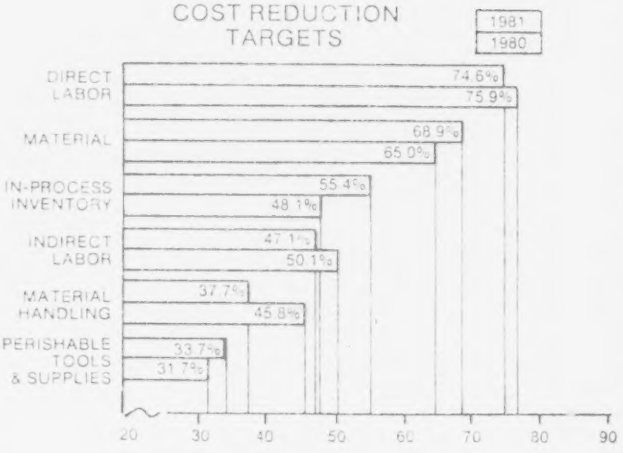
Color indicates increased proportions of category investment in 1981.

Highlights

- The primary reason to purchase equipment in 1981 is cost reduction with 64.6% of the respondents ranking this as a first or second reason to purchase. Need to increase machine capacity ranks second, falling from last year's number one spot; 43.8% cite it as primary for machinery-equipment purchase. The fact that capacity utilization had dropped to 76.1% at the time of the survey (August) from 84.2% the year earlier goes a long way toward explaining the decline in importance of this motive.
- The average minimum first year return-on-investment (pre-tax) in justifying new production equipment is 32%. While below the long-term trend of a 35% requirement, the number is up from 28% last year. It makes equipment justification more difficult and reflects the problem caused by decreased cash flows at industry's current lower operating rates.
- Numerically controlled machine investment continues to climb with 44.6% of the respondents reporting plans to purchase. Between 1976 and 1981, plants planning NC/CNC purchases grew 47% from the purchase intention rate of 30.4% in 1976 to the 44.6% for 1981. 47.7% of all respondents report they currently operate NC/CNC equipment.
- While about 90% of total expected equipment

(continued)

COST REDUCTION TARGETS



*Considered for the purpose of this study to be plants reached by PRODUCTION Magazine in: Fabricated Metal Products (SIC 34); Machinery, except Electrical (SIC 35); Electrical Machinery (SIC 36); Transportation Equipment (SIC 37); Instruments (SIC 38); selected Miscellaneous Manufacturing Industries (SIC 39) and Metal Furniture (SIC 25) which employ 50 or more persons. The 1981 figures are projected from respondents from 12,000 plants contacted in late July and August, in keeping with past procedures.

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appropriations will be spent with domestic sources, it is interesting to note that 34% of total respondents plan to spend 1% or more with non-domestic sources. Of this group, they will, on average, spend 25% of their 1981 equipment dollar with these sources.

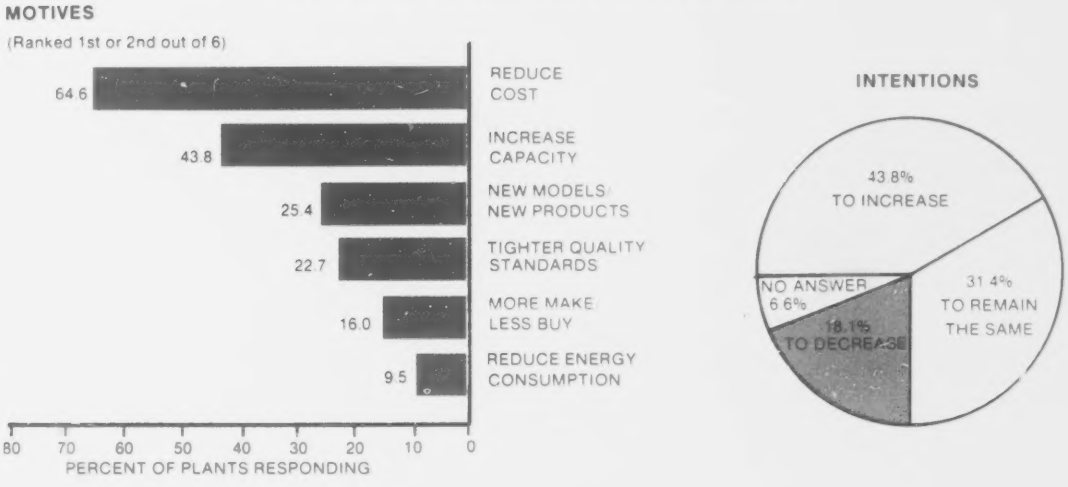
- 30.3% of the plants responding currently operate a portion of their production equipment or facility with computers or minicomputers. With planned installation of another 4.5% by plants in 1981 and 7.2% in 1982, we are projecting that 50% of the plants reached by PRODUCTION will operate a portion of their production equipment by computer or minicomputer by the end of 1983.

Patterns

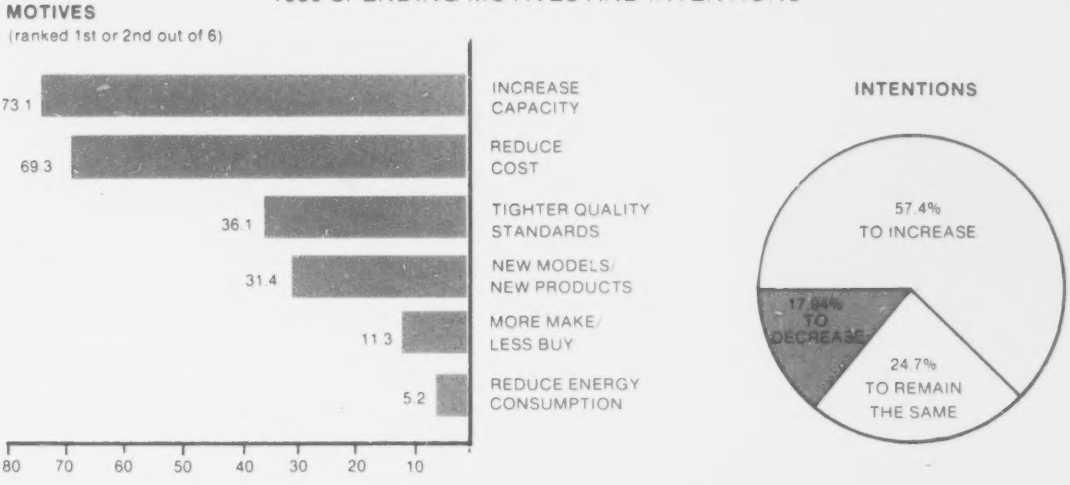
In 1981, larger shares of the equipment dollar will go to metalcutting machines (up almost 4 percentage points from last year), assembly machines and equipment, and cleaning-finishing equipment. Smaller shares will go to metal forming machines (down to a 9.0% slice of the equipment pie), material handling, gaging-inspection-testing, welding-riveting-brazing, plastic molding, and heat processing equipment.

Detailed information on each category of equipment will be presented in PRODUCTION's Manufacturing PLANBOOK 1981-82 which will be published in mid-April 1981. □

NOW
1981 SPENDING MOTIVES AND INTENTIONS



ONE YEAR AGO
1980 SPENDING MOTIVES AND INTENTIONS



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